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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/921,604 | 08/06/2001 | Michio Komoda | 027260-481 | 9506 |

7590 10/24/2002

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EXAMINER

LEVIN, NAUM B

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2825

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,604

Applicant(s)

KOMODA, MICHIO

Examiner

Naum B Levin

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,7-9,15 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 2-6,10-14 and 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, 7, 8, 15, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Alpert et al. (US Patent 6,117,182).

Alpert discloses method for optimal insertion of buffers into an integrated circuit design including:

(1), (15) a circuit modification method of modifying a circuit by inserting one or more buffers into a predetermined wire located within the circuit, the method comprising the steps of (col.1, ll.27-39):

determining whether a glitch error is caused in said predetermined wire (victim) by one or more aggressors each comprised of one or more other wires (col.6, ll.51-65; col.10, ll.30-32 and Fig.4, steps 84 and 86);

when determining that a glitch error is caused in said predetermined wire by one or more aggressors, determining one or more positions where one or more buffers are to be inserted into said predetermined wire based on a coupling capacity between each

of said one or more aggressors and said predetermined wire (col.6, ll.66-67; col.7, ll.1-16, ll.24-30 and ll.42-53 and col.9, ll.21-48);

(7), (17) The circuit modification method, wherein said one or more buffers to be inserted into said predetermined wire have a driving ability equal to or greater than that of a driving circuit for driving said predetermined wire (col.12, ll.38-51);

(8), (18) The circuit modification method, further comprising the step of selecting a type of buffer having a driving ability equal to or greater than that of said driving circuit for driving said predetermined wire and having a minimum area as each of said one or more buffers to be inserted into said predetermined wire from among a plurality of buffer cells stored in a cell library (col.8, ll.24-38).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alpert in view of Huang (US Patent 5,568,395).

With respect to claims 9, 19 and 20 Alpert teaches the features above but lacks a method, which replaces a driving circuit for driving the victim wire with another one having a higher driving ability, before insertion of buffers.

Huang discloses system for modeling and estimating crosstalk noise and detecting false logic including:

(9), (19) The circuit modification method further comprising the steps of, when determining that a glitch error is caused in said predetermined wire by one or more aggressors, replacing a driving circuit for driving said predetermined wire with another one having a higher driving ability than the driving circuit, and, before performing said insertion position determining step, determining whether a glitch error is caused in said predetermined wire driven by the other driving circuit by said one or more aggressors (col.5, ll.18-25 and col.18, ll.43-45);

(20) A circuit modification method comprising the step, when determining that a glitch error is caused in said predetermined wire by an aggressor, replacing a driving circuit for driving said predetermined wire with another one having a higher driving ability than the driving circuit (col.5, ll.18-25 and col.18, ll.43-45).

It would have been obvious to a person of ordinary skills in the art at the time the invention was made to employ Huang's teaching regarding the method, which replaces the driving circuit for driving the victim wire with another one having the higher driving ability, before insertion of buffers and use it in Alpert's invention to reduce the amount of glitch, and eliminating of the glitch error can be carried out more effectively.

Allowable Subject Matter

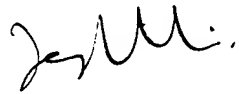
5. Claims 2-6, 10-14 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naum B Levin whose telephone number is 703-305-0144. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S Smith can be reached on 703-308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


LEIGH M. GARBOWSKI
~~TRENT DUMALIER~~

N L
October 4, 2002